CORE NETWORK
22
UMTS WIRELESS NETWORK
RADIO ACCESS NETWORK
24
RADIO NETWORK CONTROLLER
32
NETWORK INTERFACE
34
NODE B
30
WIRELESS DEVICE
26
WIRELESS DEVICE
28

FIG. 1

100 Mbps Ethernet
Payload
TCP/UDP
IP
EN
Dynamic Routing function
AAL2/AAL5 SDU Routed to IP Address
STM-1 Destined Data OR Routing function Control Messages
Payload
AAL2 VCs
AAL5 VCs
ATM
VC-4
STM-1
STM-1
cPCI
Dynamic Routing Function:
Terminates AAL2 and routes based on CID
Terminates AAL5 and routes based on VC

FIG. 2

3937TD' 2005/660

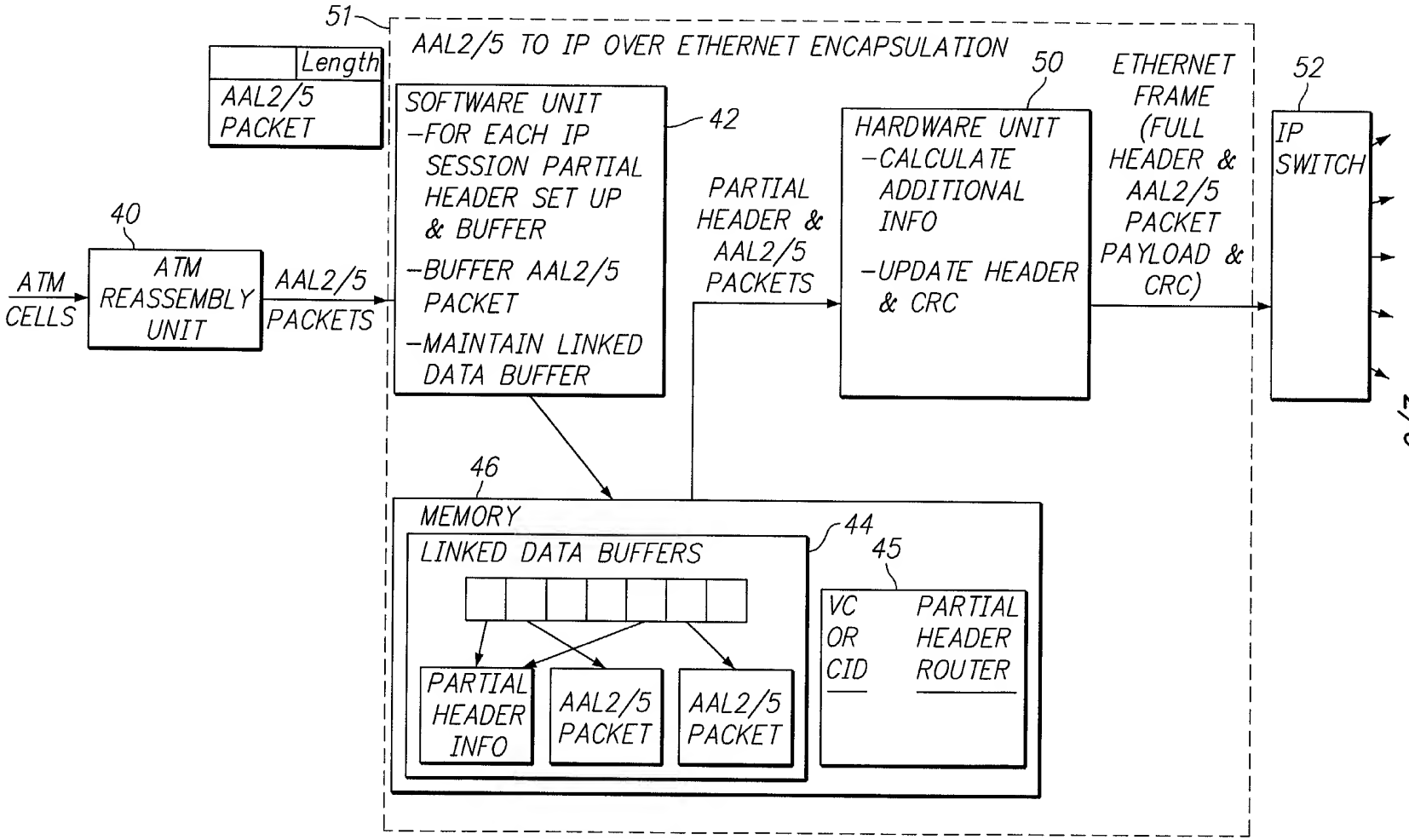

FIG. 3

Appln. Filing Date: October 9, 2001
Title: Performance Improvement for ATM AAL2/5 to IPPacket Processing
Inventor: Reinhard Deml et al.
Application Serial No: 09/975,087

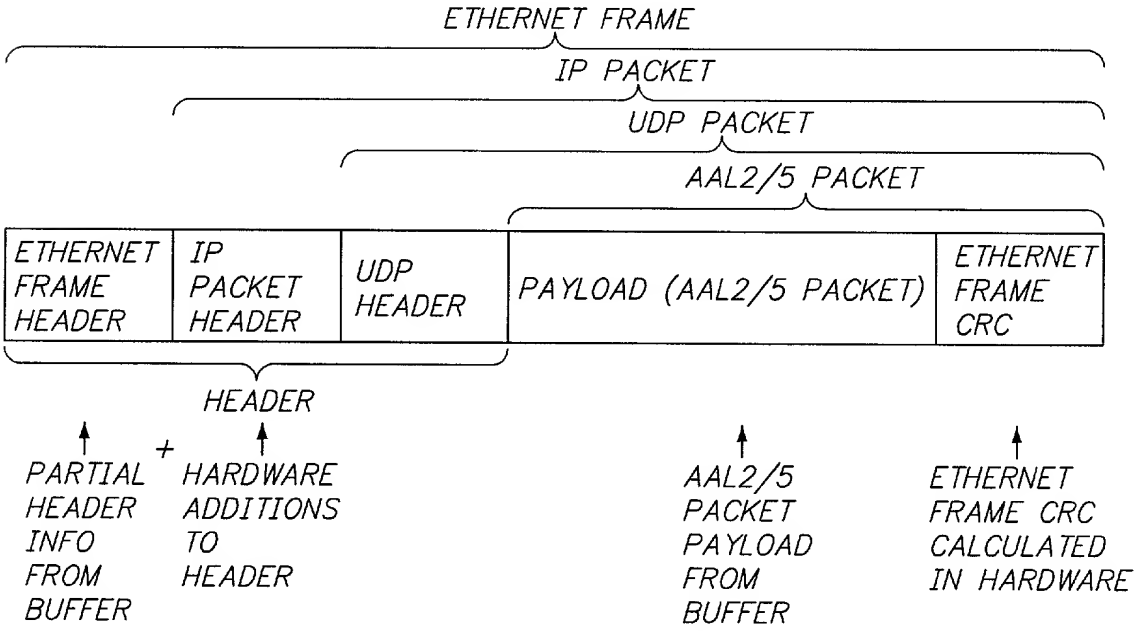

FIG. 4

ETHERNET FRAME HEADER PORTION	unused	Destination MAC address
	Destination MAC address	
	Source MAC address	
	Source MAC address	Ethernet Type (in HW)
IP HEADER PORTION	Version / Type of Service	Total Length (in HW)
	Identification	Flags / Fragmentation
	Time to Live / Protocol ID	IP Header Checksum (in HW)
	Source IP Address	
	Destination IP Address	
UDP HEADER PORTION	UDP Source Port	UDP Destination Port
	UDP Message Length (in HW)	UDP Checksum (in HW)

FIG. 5

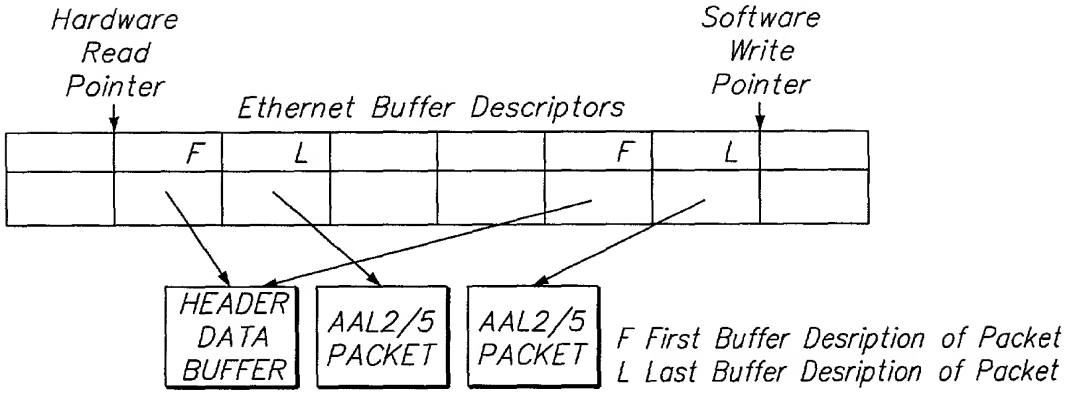
Hardware Read Pointer
Software Write Pointer
Ethernet Buffer Descriptors
F
L
F
L
HEADER DATA BUFFER
AAL2/5 PACKET
AAL2/5 PACKET
F First Buffer Desription of Packet
L Last Buffer Desription of Packet

FIG. 6

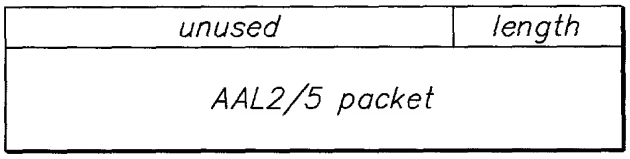
unused
length
AAL2/5 packet

FIG. 7

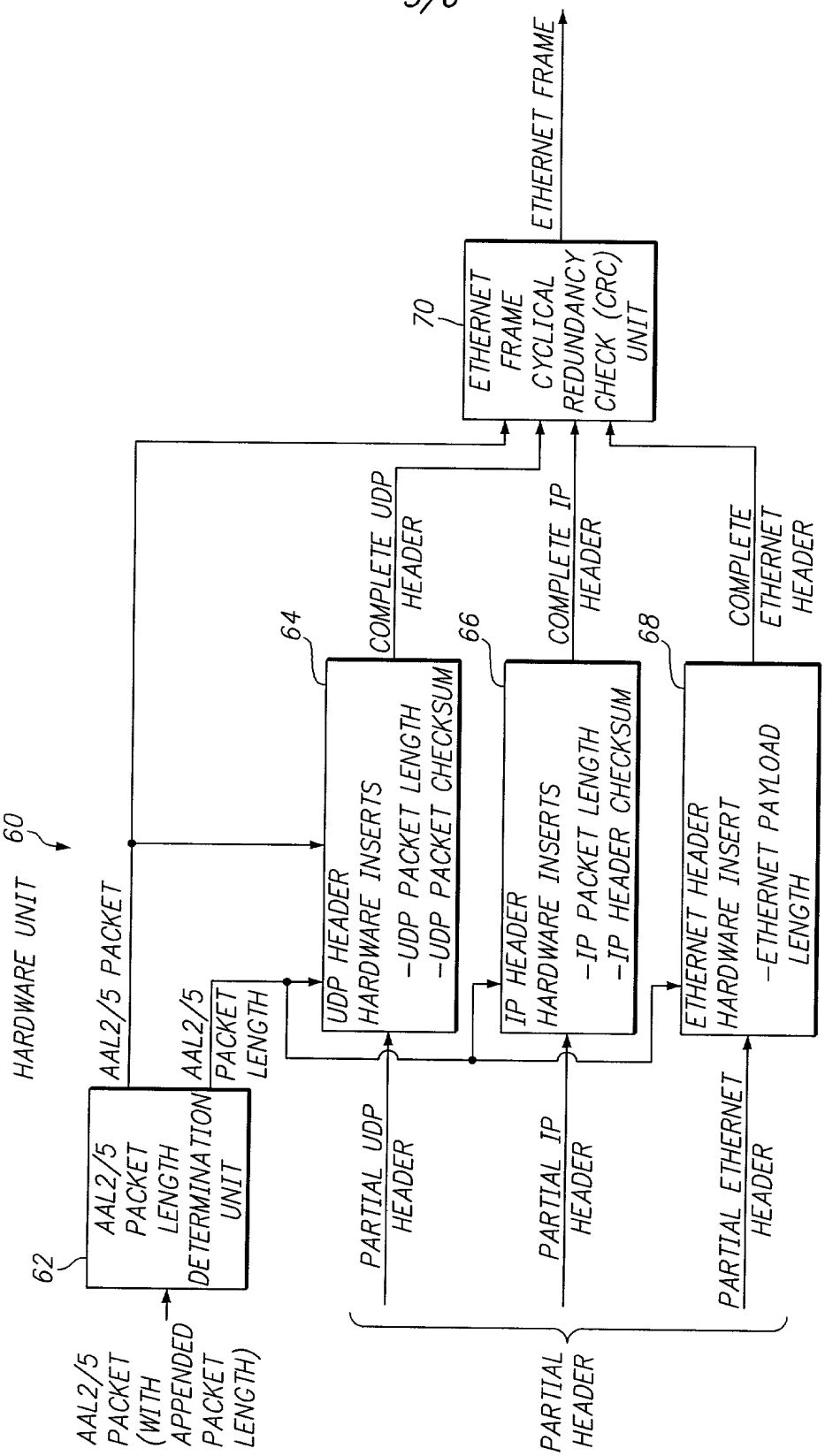
HARDWARE UNIT
60
AAL2/5 PACKET
AAL2/5 PACKET LENGTH
62
AAL2/5 PACKET LENGTH DETERMINATION UNIT
AAL2/5 PACKET (WITH APPENDED PACKET LENGTH)
64
UDP HEADER HARDWARE INSERTS
-UDP PACKET LENGTH
-UDP PACKET CHECKSUM
COMPLETE UDP HEADER
66
IP HEADER HARDWARE INSERTS
-IP PACKET LENGTH
-IP HEADER CHECKSUM
COMPLETE IP HEADER
68
ETHERNET HEADER HARDWARE INSERT
-ETHERNET PAYLOAD LENGTH
COMPLETE ETHERNET HEADER
PARTIAL UDP HEADER
PARTIAL IP HEADER
PARTIAL ETHERNET HEADER
PARTIAL HEADER
70
ETHERNET FRAME CYCLICAL REDUNDANCY CHECK (CRC) UNIT
ETHERNET FRAME

FIG. 8

Appln. Filing Date: October 9, 2001
Title: PERFORMANCE IMPROVEMENT FOR ATM AAL2/5 TO IPPACKET PROCESSING
Inventor: Reinhard Deml et al.
Application Serial No: 09/975,087

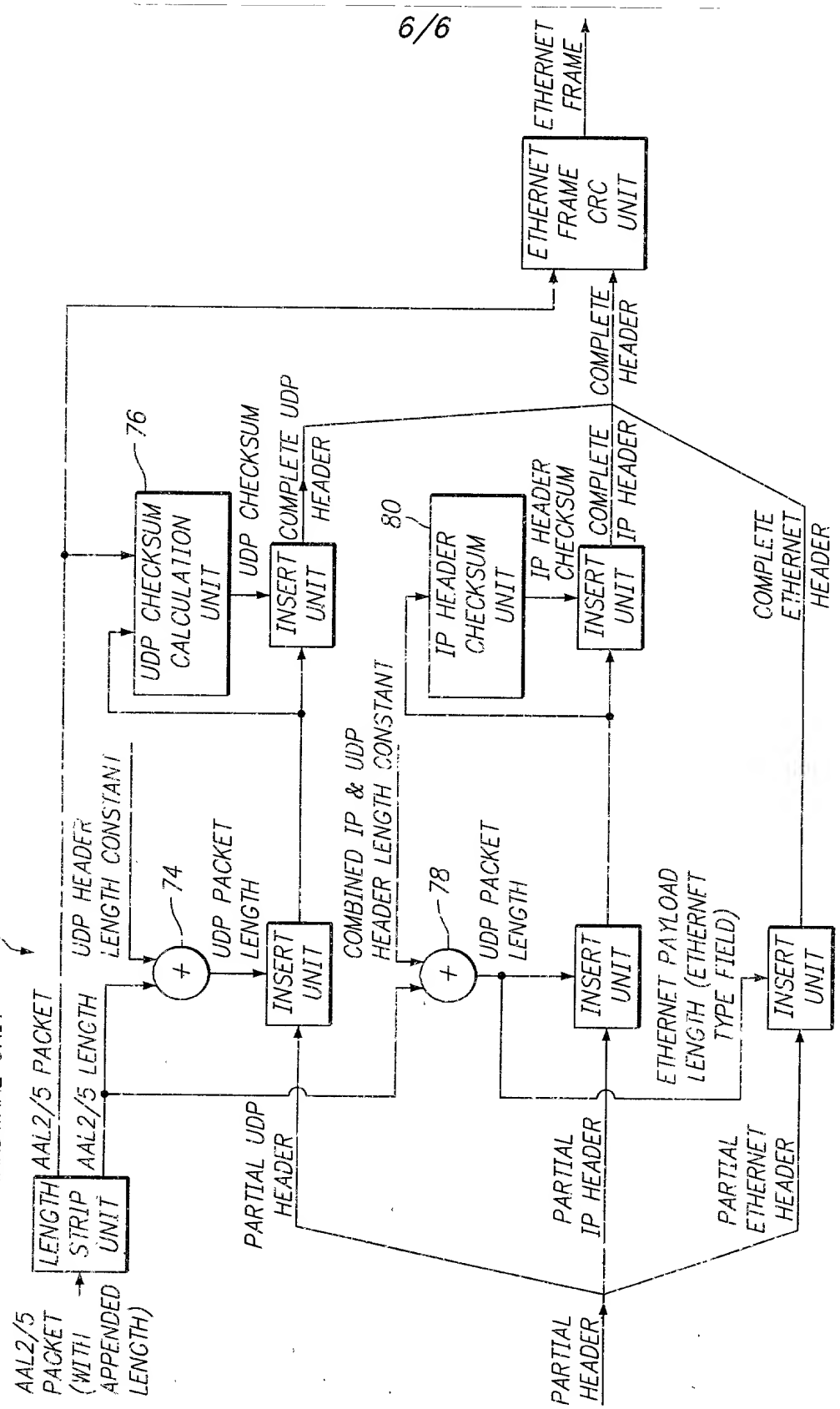

FIG. 9